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ABSTRACTS OF ARTICLES IN "AVTOMATIKA I TELEMEKHANIKA"

USSR/Physics - Automatics and telemechanics, transients

Card 1/2 Pub. 10 - 1/10

Author : Meyerov, M. V. (Moscow)

Title : Using the Vyshnegradskiy generalized curves to construct the curve of the transient process of automatic regulation

Periodical : Avtom. i telem., 15, 193-199, May-Jun 1954

Abstract : In two earlier works (Izv. AN SSSR, Otd. tekh. nauk, No 12, 1950; "Using the curve of D-partitioning to study the quality of automatic regulation systems," Avtom. i telem., 12, No 6, 1951) the author showed how one can use the curve of D-partitioning (D-razbiyeniye) in one complex parameter to evaluate preliminarily the quality of linearized automatic regulation systems, then to construct the real frequency characteristic, and after that to construct by the method of trapezoidal characteristics the curve of the transient process of regulation. In this article the author shows how one can use the curves of D-partitioning in two real parameters (Vyshnegradskiy generalized curves, q.v. Yu. I. Neymark, "Determining the values of the parameters for which an automatic regulation system is stable," Avtom. i telem., 10, No 5, 1948) to construct the transient process of automatic regulation systems. Headings: introduction; outline of the method; example; determining the positive region and constructing the transient process from the Vyshnegradskiy curves. Other references: V. V. Solodovnikov, "Application of trapezoidal frequency characteristics to analysis of the quality of automatic

Avtom. i telem., 15, 193-199, May-Jun 1954

Card 2/2 Pub. 10 - 1/10

regulation systems," Avtom. i telem., 10, No 5, 1949. D. I. Mar'yanovskiy, Vestnik elektropromyshlennosti, No 3, 1949. V. V. Solodovnikov, Izv. AN SSSR, Otd. tekh. nauk, No 4, 1949.

Institution :

Submitted : May 9, 1953

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USSR/Physics - Automatics and telemechanics, nonlinear systems

Card 1/1 Pub. 10 - 2/10

Authors : Kuznetsov, P. I., Stratonovich, R. L., and Tikhonov, V. I. (Moscow)

Title : Passage of stochastic functions through nonlinear systems (Continuation)

Periodical : Avtom. i telem., 15, 200-205, May-Jun 1954

Abstract : In their earlier article (Avtom. i telem., 14, No 4, 1952) of the same title, the authors establish the laws governing the transformation of the moment functions of a certain nonlinear system relating the function obtained at the output in the case where a stochastic function acts upon the input. In the present article the authors set up the equations of nonlinear extrapolation and filtration and indicate the way to solve them; they solve now the inverse problem: how to find the transformation which is optimal in the familiar sense. The authors thank A. M. Yaglom. Other references: V. V. Solodovnikov, Vvedeniye v statisticheskuyu dinamiku sistem avtomaticheskogo upravleniya [Introduction to statistical dynamics of systems of automatic control], State Publishers of Theoretical Technical Literature, 1952. Wiener, Extrapolation, interpolation and smoothing of stationary time series, N. Y., 1949. Davenport et al., Statistical errors in measurements of random time functions, J. Appl. Phys., 23, No 4, 377-388, 1952.

Institution :

Submitted : January 19, 1953

USSR/Physics - Automatics and telemechanics, relay-contact circuits (off-on)

Card 1/2 Pub. 10 - 3/10

Author : Roginskiy, V. N. (Moscow)

Title : Taking into account the nonutilized states in the synthesis of relay-contact circuits

Periodical : Avtom. i telem., 15, 206-222, May-Jun 1954

Abstract : One of the basic problems in the synthesis of relay-contact circuits is obtaining circuits with a minimum number of relays and contacts. At the present time there is still no general method for finding the optimum solution. A possible measure for simplifying such circuits is, as is well known, to take into account those states which are not encountered during the operation of the circuit in question. In this article the author derives a method by which one can point out those constituents corresponding to nonutilized states of the circuit being synthesized, thus permitting one to simplify the structural formulas of the individual circuit elements. Application of this method is most effective where it has been difficult to develop suitable relations from the sequence of operation of the circuit elements. References: M. A. Gavrilov, Teoriya releyno-kontaktnykh skhem [Theory of relay-contact circuit schemes], Academy of Sciences USSR Press, 1950. M. F. Kopp and A. D. Kharkevich, Zadachnik po avtomaticheskoy telefonii [Handbook of problems on automatic telephony], Communications Press, 1952. Kitayev, Ye. V. Telefoniya [Telephony], Communications Press, 1952. M. G. Karmazov, Avtomaticheskaya telefoniya [Automatic telephony],

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Avtom. i telem., 15, 206-222, May-Jun 1954

Card 2/2 Pub. 10 - 3/10

Communications Press, 1953. The article employs symbolic logic to designate the relay constituents (e.g. a for open switch and $\bar{a}$ for closed switch; ab for two relays in series and a+b for two relays in parallel). The author introduces a new fractional designation u/w representing a set of possible choices in a solution. Main headings: principle of unused states; finding the constituents giving a simplification of a circuit; many-valued solutions; taking into account unused states in the synthesis of many-contact circuits; example of the synthesis of a one-contact circuit.

Institution :

Submitted : May 18, 1953

USSR/Physics - Automatics and telemechanics, control of tractor

Card 1/1 Pub. 10 - 14/10

Author : Biryukov, N. O. (Moscow)

Title : Some peculiarities in the automatic regulation of the tension in the cable of the electric tractor

Periodical : Avtom. i telem., 15, 223-236, May-Jun 1954

Abstract : The author analyzes the conditions surrounding the operation of the drive for the cable drum on the electric tractor and surveys existing systems. He develops in full the peculiarities inherent in the cable-winding apparatus as an object to be regulated and indicates the influences of these peculiarities upon the stability of existing systems. Considerations are presented on ways to simplify and improve automatic regulation systems governing the tension in the cable of the electric tractor. Six references, all USSR.

Institution :

Submitted : February 1, 1954

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USSR/Physics - Automatics and telemechanics, control of pressure

Card 1/2 : Pub. 10 - 5/10

Author : Zalmanson, L. A. (Moscow)

Title : Differential equations describing the processes of pressure variation in the flow chambers of pneumatic control and regulating devices

Periodical : Avtom. i telem., 15, 237-259, May-Jun 1954

Abstract : The author investigates the processes governing the discharge of the gas in the flow chambers (protochnaya kamera). He constructs graphs by which one can determine without any preliminary derivations or computations the numerical values of the coefficients in the differential equation for the process occurring in chambers of the most wide-spread type. Procedures are given for determining the coefficients in the differential equations describing the process also for other types of flow pneumatic chambers. Five references: G. M. Borovskiy, "Pneumatic designs for brakes," Publishers for the Ministry of Transport Machine Construction of the USSR, 1949. V. L. Lossiyevskiy, Osnovy avtomaticheskogo regulirovaniya tekhnologicheskikh protsessov [Principles of automatic regulation of technological processes], Defense Publishers, 1950. Three by L. A. Zalmanzon, all in Avtom. i telem.: "Graphs for determining the parameters of steady-state flow of air through a system of calibrated apertures in pneumatic regulators," 13, No 2, 1952; "Branched hydraulic systems in automatic devices," 8, No 3, 1947; "Determining the coefficient of viscous friction in stroke regulators," 12, No 6, 1951.

Avtom. i telem., 15, 237-259, May-Jun 1954

Card 2/2 Pub. 10 - 5/10

Institution :

Submitted : December 9, 1952

USSR/Physics - Automatics and telemechanics, telemetering system

Card 1/1 Pub. 10 - 6/10

Author : Fremke, A. V. (Leningrad)

Title : Compensatory inductive-rectifier telemetering system

Periodical : Avtom. i telem., 15, 260-262, May-Jun 1954

Abstract : The author derives expressions for the current in the connecting line of the compensatory inductive-rectifier system and a general expression for the additional error. He gives the limiting static value of the system for stable operation. The system was developed by the author at the factory "Elektropul't". References: A. V. Fremke, "Problem of computing the time taken to damp telemetering systems," Izv. AN SSSR, OTN, No 12, 1945. V. S. Malov, Telemekhanika v energeticheskikh sistemakh [Telemechanics in power systems], State Power Press, 1951.

Institution :

Submitted : August 31, 1953

USSR/Physics - Automatics and telemechanics, control of density

Card 1/1 Pub. 10 - 7/10

Authors : Krassov, I. M., and Barkalov, P. T.

Title : Dynamic testing of the instrument for measuring the concentration of sulfuric acid [kontsentratomer]

Periodical : Avtom. i telem., 15, 263-271, May-Jun 1954

Abstract : Discussed is the application of the method of oscillations of a rectangular form for determining the dynamic characteristics of the sensitive element in the regulator of sulfuric acid concentration. The experimental setup created for this purpose is described, and the procedure for conducting the experiments is briefly expounded and results presented. The authors acknowledge the participation of V. M. Zhurin and P. S. Akimov in the experiments and of V. A. Ivanov and N. A. Bartsal in electrical hookup. Six references, all USSR; e.g. Ye. G. Dudnikov, "Determining the adjustment of a regulator from the dynamic characteristics of the regulated object and regulator as obtained by tests," Avtom. i telem., 14, No 3, 1953; Ye. G. Dudnikov, I. M. Krassov, A. A. Tagayevskaya, V. P. Temnyy, and P. T. Barkalov, "Experimental determination of the dynamic characteristics of industrial regulated objects," Avtom. i telem., 14, No 4, 1953.

Institution :

Submitted : July 27, 1953

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USSR/Physics - Automatics and telemechanics, scientist

Card 1/1 Pub. 10 - 8/10

Author : anonymous

Title : Valentin Ivanovich Kovalenkov, Corresponding Member of the Academy of Sciences USSR, on the occasion of his 70th birthday

Periodical : Avtom. i telem., 15, 272-274, May-Jun 1954

Abstract : Outstanding Soviet scientist in the field of electrical communications, senior professor, honored active worker in science and technology, general-major in the engineering-technical service. In 1939 chosen corresponding member of the Academy of Sciences USSR. In 1940 named deputy director of the Institute of Automatics and Telemechanics by the Presidium of the Academy of Sciences USSR, and in 1942 became director. Since 1948 has been director of the Laboratory for the Working Out of Problems of Wire Communication, Academy of Sciences USSR. Has published 35 fundamental books and 120 articles on electrical communication and allied fields, besides numerous scientific-technical and popular brochures. Recipient of 76 patents in wire, radio, tubes, sound cinema, etc. Since 1911 instructor at the Electrotechnical Institute in Leningrad, and since 1917 professor in the chair of telephony until 1941; from 1923 to 1944 professor in the Military Electrotechnical Academy imeni S. M. Budennyy. Member of directorate of All-Union Scientific Engineering-Technical Society of Radio Engineering and Electrical Communication imeni A. S. Popov. An editor of Avtomatika i telemekhanika. Recipient of many orders.

USSR/Physics - Automatics and telemechanics, bibliography

Card 1/1 Pub. 10 - 9/10

Author : Atabekov, G. I., professor and doctor of technical sciences

Title : Review of E. V. Zelyakh's book Osnovy obshchey teorii lineynykh elektricheskikh skhem [Principles of the general theory of linear electrical circuits], Academy of Sciences USSR Publishers, 1951, 336 pages

Periodical : Avtom. i telem., 15, 275-276, May-Jun 1954

Abstract : The reviewer claims the book to be an outstanding work advancing Soviet science and priority in the general theory of four-terminal networks and multipole networks. The book contains a list of literature of 224 items. On the basis of the author's work, V. A. Satarov successfully developed a new method for computing and designing the partial-phase (nepolnofaz) regime of three-phase electrical systems, characterized by the disconnecting of one or two phases at the same time with short circuit in some part of the system. 2500 copies only released.

USSR/Physics - Automatics and telemechanics, conference

Card 1/1 Pub. 10 - 10/10

Author : Domanitskiy, S. M.

Title : Chronicles. Conference on the automatization of the production of industrial goods widely consumed and of subsistence goods

Periodical : Avtom. i telem., 15, 277-280, May-Jun 1954

Abstract : From 8 to 13 March 1954 in Moscow in the Institute of Automatics and Telemechanics, Academy of Sciences USSR, a conference was held attracting more than 300 representatives of various organization in Moscow, Leningrad, Kiev, Ivanov, Vladimir; after the introductory speech of the director of the Institute, V. A. Trapeznikov, corresponding member of the Academy of Sciences USSR, the participants heard 30 reports on the automatization of consumer goods industry. Noteworthy was the report of N. A. Petrov, candidate of technical sciences and head of the Technical Directorate [upravleniye] of the Ministry of Consumer Goods Industry, entitled "Automatization of production processes in the consumer goods industry." The conference passed a resolution calling for a significant increase in industrial automatization within the next 2-3 years.

Institution : -

Submitted : -

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USSR/Physics - Automatics and telemechanics, scientists

Card 1/2 Pub. 10 - 1/11

Authors : Ivakhnenko, A. G.; Kukhtenko, A. I.; Khramoy, A. V.; and Chinayev, P. I.

Title : Creative cooperation of the scientists of Russia and Ukraine in the creation and development of the theory and practice of automatic regulation

Periodical : Avtom. i telem., 15, 289-297, Jul-Aug 1954

Abstract : Presented are examples of the cooperation of Russian and Ukrainian scientists working on the creation of the theoretical foundations of modern automatics, the theory of automatic regulation. In the automatics and telemechanics laboratory of the Institute of Electrical Engineering, Academy of Sciences of Ukrainian SSR, A. N. Milyakh and associates are developing the theory of three-dimensional selsyns, and G. K. Nechayev a number of devices with heat-dependent resistances. In the Ukraine the theory of automatic regulation of thermal machines is presently being developed by N. N. Nastenko, Dr. Tech. Sci., and Yu. G. Kornilov, Cand. Tech. Sci., student and successor of I. N. Voznesenskiy. In the Kiev Polytechnic Institute complex problems of electrical automatics are being worked out in a number of chairs. V. A. Bogomolov, V. L. Benin and associates in the Kharkov affiliate of the Institute of Electrical Engineering, Acad. Sci. Ukraine SSR, have developed contactless systems of electrical automatic speed regulators in hydroelectric power stations, regulators of the angle of turn of turbine blades, frequency regulators of a-c generators, etc.; these systems have found application in the Ukraine and the far north (e.g.

Avtom. i telem., 15, 289-297, Jul-Aug 1954

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Tulomskaya GES [Tuloma Hydroelectric Power Station]). In the Donets Basin mining tests have shown that automatization of coal combines increases labor productivity by 25-30%; in this field work A. A. Ivanov and K. P. Bocharov at the Donets Coal Institute. In the Ukraine G. K. Nechayev and L. N. Dashevskiy, former students of S. A. Lebedev, are presently carrying on his work on the stability of electrical systems, electrical automatics, and especially computer technique, in the Institute of Electrical Engineering.

Institution :

Submitted :

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USSR/Physics - Automatics and telemechanics, stability

Card 1/1 Pub. 10 - 2/11

Author : Inosov, V. L. (Kiev)

Title : Analysis of the stability of an energy system in accordance with its energy functions, and the demands proceeding from this analysis that are to be made on regulators operating in electrical systems

Periodical : Avtom. i telem., 15, 298-309, Jul-Aug 1954

Abstract : On the basis of the general relations among the signs (e.g. signum T, etc.) of the kinetic, potential and dissipative functions of a system with many degrees of freedom and on the basis of the problem of equilibrium position the system the author formulates the condition for the absence of self-excited oscillations in an energy system. He indicates those requirements which must be satisfied by regulators of excitation in generators in order that self-excited oscillations be impossible. It is concluded that testing of the static stability of a complex energy system according to the conditions for self-excited oscillations is practically impossible, but that analysis of the stability of an energy system according to its energy function will permit one to show the conditions on the excitation regulator guaranteeing absence of self-excited oscillations; these conditions are sufficient and necessary for all regulators of energy systems.

Institution :

Submitted : September 5, 1953

USSR/Physics - Automatics and telemechanics, autonomic systems

Card 1/1 Pub. 10 - 3/11

Author : Shestakov, V. I. (Moscow)

Title : Algebraic method for synthesizing autonomic systems of two-position relays

Periodical : Avtom. i telem., 15, 310-324, Jul-Aug 1954

Abstract : Expounded is a vector-algebraic method for synthesizing autonomic systems with two-position relays that does not require the application of any tables or graphs. The concept of an autonomic system of two-position relays was introduced in the author's article on the analysis of such systems ("Algebraic method for analyzing autonomic systems of two-position relays," Avtom. i telem., 15, No 2, 1953), in which the problem of finding all possible processes was solved uniquely. The inverse problem of finding the autonomous systems of two-position relays according to preassigned processes is called the synthesis problem. Reference: M. A. Gavrilov, Teoriya releyno-kontaktnykh skhem [Theory of relay-contact circuits], Moscow-Leningrad, 1950.

Institution :

Submitted : January 10, 1953

STAT

USSR/Physics - Automatics and telemechanics, damping

Card 1/2 Pub. 10 - 4/11

Author : Kuzovkov, N. T. (Moscow)

Title : Application of the method of logarithmic frequency characteristics for the evaluation of damping in regulated systems

Periodical : Avtom. i telem., 15, 325-331, Jul-Aug 1954

Abstract : The method of logarithmic frequency characteristics, which is widely employed for the investigation of stability and quality of automatic regulation systems, is generalized to the case of the determination of damping in a linear system. A procedure is indicated for the synthesis of correcting circuit members which impart to the system damping assigned in advance. A numerical example is given. It is concluded that the damping factor delta in a linear system can be evaluated by way of the transformation of the circuit transfer functions of this system by means of the substitution $d/dt = p = -\delta + jw$ and by the usual investigation of the stability of the transformed system by means of the method of logarithmic frequency characteristics; the system under study will have the preassigned damping delta only in the case where the transformed system is stable. Cited work of the author: "Evaluating the degree of stability and maximum frequency of a linear system," Nauchno-tekhn. sb. NII MPSS [Sci.-tech. symp. of Sci.-Res. Ministry of Communications Equipment Industry], No 1, 1949. Other references: V. V. Solodovnikov, "Application of the method of logarithmic frequency characteristics to the study of stability and to the

Avtom. i telem., 15, 325-331, Jul-Aug 1954

Card 2/2 Pub. 10 - 4/11

evaluation of the quality of tracking and regulated systems," Avtom. i telem., 9, No 2, 1948; "Synthesizing the correcting devices of tracking systems in the case of typical actions," Avtom. i telem., 12, No 5, 1951; "Application of trapezoidal frequency characteristics to the analysis of the quality of automatic regulation systems," Avtom. i telem., 10, No 5, 1949. N. N. Myasnikov, "Criterion of Mikhaylov and evaluation of the roots of the characteristic equation," Avtom. i telem., 10, No 4, 1949. Ya. Z. Tsypkin and P. V. Bromberg, "Degree of stability of linear systems," Izv. AN SSSR, OTN, No 12, 1945.

Institution :

Submitted : March 29, 1954

USSR/Physics - Automatics and telemechanics, relay contacts

Card 1/2 Pub. 10 - 5/11

Author : Poverov, G. N. (Moscow)

Title : Matrix methods for the analysis of relay-contact circuits from the conditions for nonoperation

Periodical : Avtom. i telem., 15, 332-335, Jul-Aug 1954

Abstract : The author considers the use of the conditions for nonoperation (open circuit) when matrix methods are employed to analyze relay-contact circuits. Namely, he employs Boolean determinants, or the so-called logical determinants of Z. Kobrzynski ("La theorie des determinants logiques," Comptes rendus des seances de la Societe des Sciences et des Lettres de Varsovie, III, 30, 1938). If a certain function representing the conditions for operation assumes the value 1, then the two-terminal network forms a closed circuit; and if the function is 0, the network is open. The author gives a complicated example of 5 arguments (switches a,b,c,d,e) and 6 nodes, resulting in a square 6-row matrix. References: M. A. Gavrilov, "Construction of relay circuits with bridge connections proceeding from conditions for nonoperation," Avtom. i telem., 14, No 2, 1953. B. I. Aranovich, "Use of matrix methods in problems of the structural analysis of relay-contact circuits," Avtom. i telem., 10, No 6, 1949. A. G. Lunts, "Algebraic methods of analysis and synthesis of contact circuits," Izv. AN SSSR, ser. matem., 16, No 5, 1952.

Institution :

Submitted : April 23, 1954

USSR/Physics - Automatics and telemechanics, nonlinear resistances

Card 1/2 Pub. 10 - 6/11

Author : Rozenblat, M. A. (Moscow)

Title : Principles governing the theory and calculation of selective rectifiers with nonlinear symmetric resistances

Periodical : Avtom. i telem., 15, 336-353, Jul-Aug 1954

Abstract : It is shown that nonlinear resistances with odd voltampere characteristics can be utilized as selective rectifiers and unusual filters. By a suitable choice of the circuit containing the nonlinear resistances it turns out that one can rectify voltages only of completely definite frequency. Here the author succeeded in obtaining linear, quadratic, cubic and other dependences of the rectified current upon the voltage to be rectified. He gives a procedure for calculating and designing selective rectifiers in accordance with preassigned parameters. References: M. A. Rozenblat and O. A. Sedykh, "Electrical properties and application of carborundum resistances," Avtom. i telem., 12, No 4, 1951. M. A. Rozenblat, "Selective rectifiers by means of nonlinear resistances," DAN SSSR, 74, No 4, 1950. V. I. Pruzhinina-Granovskaya, "Cause of the nonlinearity of the voltampere characteristics of carborundum," ZhTF, 19, No 1, 1949.

Institution :

Submitted : June 26, 1951

STAT

USSR/Physics - Automatics and telemechanics, transients

Card 1/2 Pub. 10 - 7/11

Author : Krug, Ye. K. (Moscow)

Title : Increasing the rapid action of executor devices

Periodical : Avtom. i telem., 15, 356-360, Jul-Aug 1954

Abstract : A procedure is discussed for increasing the speed of action of executor (controller) devices. The author points out the effectiveness of introducing nonlinear connections in order to shorten the time of the transient process. For a given structure of the static controllers the least duration of the transients can be obtained by introducing into the circuit a velocity feedback consisting of nonlinear elements. The procedure for selecting the nonlinear dependence of the voltage of velocity feedback upon the speed has proved successful when graphical constructions are used. This procedure is therefore recommended when the automatic regulation is too complicated to be amenable to simple mathematical methods. It is concluded that more detailed studies are needed on the application of nonlinear feedbacks in automatic regulation systems in order to shorten transient processes of controller devices. References: Ye. K. Krug, "Alternating-current executor mechanism," Trudy Pervoy nauchno-tekhnicheskoy konferentsii molodykh spetsialistov Instituta avromatiki i telemekhaniki AN SSSR [Works of the First Scientific-Technical Conference of Young Specialists of the Institute of Automatics and Telemechanics, Acad. Sci. USSR], Acad. Sci. USSR Publishers, 1953.

Avtom. i telem., 15, 356-360, Jul-Aug 1954

Card 2/2 Pub. 10 - 7/11

A. Ya. Lerner, "Improving the dynamic properties of automatic compensators by means of nonlinear feedbacks," Avtom. i telem., 13, No 2 and 4, 1952. S. Z. Barskiy, "Asynchronous drive with choke control," Vestnik elektropromyshlennosti, No 1, 1948. M. A. Rozenblat, Magnitnyye usiliteli [Magnetic amplifiers], State Power Press, 1949. V. D. Nagorskiy, "Regulation of the speed of rotation of asynchronous electric motors of the aviation type over a wide range," Trudy VVIA im. Zhukovskogo, No 321, 1948.

Institution :

Submitted : February 7, 1954

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USSR/Physics - Automatics and telemechanics, nonlinearity

Card 1/1 Pub. 10 - 8/11

Author : Aleksandrovskiy, N. M., and Krug, G. K.

Title : Discussion. Some remarks on Ye. P. Popov's article entitled "Taking into account the influence of nonlinearity during the calculation of tracking systems," in Avtom. i telem., 14, No 6, 1953

Periodical : Avtom. i telem., 15, 361, Jul-Aug 1954

Abstract : The authors note that approximate methods for investigating present-day nonlinear automatic regulation systems, methods created by the efforts of Soviet scientists, are being widely employed in practical calculations. Although the physical foundations of these approximate methods are sufficiently well known, still each work expounding technical methods for calculating the principal parameters of self-excited oscillations is definitely of interest. Ye. P. Popov's work comprises this circle of problems and contains examples showing application of the indicated methods. However, Ye. P. Popov gave a large number of examples of nonlinearities which were essentially identical; in addition, the examples were not successfully chosen. Some of these nonlinear elements could not induce self-excited oscillations in a tracking system which is stable in the linear approximation. Very strange was the absence of an objective evaluation of the method of L. S. Gol'dfarb, since it found wide application in the practical computations. [On pages 362-363, following the above remarks, Ye. Popov answers the objections of N. M. Aleksandrovskiy and G. K. Krug.]

USSR/Physics - Automatics and telemechanics, high-voltage lines

Card 1/1 Pub. 10 - 9/11

Author : Kostanyan, G. G. (reviewer)

Title : Review of G. I. Atabekov's book, Distantsionnyy printsip zashchity dal'nikh elektroperedach [Distance principle of protecting long-distance electrical transmissions], Academy of Sciences Armenian SSR Publishers, 1953

Periodical : Avtom. i telem., 15, 364-366, Jul-Aug 1954

Abstract : The relay protection of high-voltage electrical transmission lines is one of basic aspects of the automatization of present-day electrical systems. In the general complex of anti-breakdown technical means a very important position is held by relay protection together with other forms of system automatics (automatic repeater switches, automatic emergency discharging according to frequency, etc.). The reviewed book is devoted to a theoretical discussion of the application of distance relays in the protection and line automatics of high-voltage electrical transmission lines of great length and heavily loaded electrical transmission lines, especially in connection with the 400 kv Kuybyshev-Moscow and Stalingrad-Moscow lines. The reviewed book, which is the first book to appear on this subject, represents a valuable contribution to USSR science, and is recommended for students of advanced courses in electrical power faculties and for engineers working on the automatics of electrical energy systems.

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USSR/Physics - Automatics and telemechanics, bibliography

Card 1/3 Pub. 10 - 10/11

Authors : Khramoy, A. V. (editor); Vil'dt, Ye. O., and Landsberg, R. S. (compilers)

Title : List of USSR literature on automatic regulation and allied problems for 1953

Periodical : Avtom. i telem., 15, 367-374, Jul-Aug 1954

Abstract : A list of 185 bibliographic items. In Avtom. i telem. for 1953 (Vol. 14): A. A. Abdulayev, "Automatic regulation of groups of compressor wells connected through a general feeder. I," No3, 283-293. A. A. Andronov and A. G. Mayer, "Vyshnegradskiy problem in theory of direct regulation," No5, 505-530. S. Ya. Berezin, "Problem of determining the steady-state errors of operation of tracking drives for harmonic disturbance," No4, 403-406. V. N. Veller, "Structural analysis and synthesis of tracking and regulating systems," No1, 104-106. Ye. O. Vil'dt and R. S. Landsberg, "Supplement to list of USSR literature on automatic regulation for 1951," No2, 246-249; "List of USSR literature on automatic regulation for 1952," No2, 249-256. A. A. Voronov, "Periodic solutions of differential equations of automatic regulation systems containing a sensitive element with dry friction," No 1, 120-128. N. V. Gabashvili, "Automatic regulation of frequency and power exchanges in unified electric power systems by controlling stations with astatic characteristics," No2, 129-136. Yu. A. Gopp, "Selecting the optimum parameters of a direct regulation system," No6, 729-732. Ye. G. Dudnikov, "Determining the tuning of a regulator in accordance with the dynamic characteristics of the regulated object and regulator obtained by experiment," No3, 294-307. Ye. G. Dudnikov, I. M. Krassov, A. A. Tagayevskaya, V. P. Temnyy, and P. T. Barkalov,

Avtom. i telem., 15, 367-374, Jul-Aug 1954

Card 2/3 Pub. 10 - 10/11

"Experimental determination of the dynamic characteristics of industrial regulated objects," No4, 418-423. A. A. Krasovskiy and G. S. Pospelov, "Some methods for computing the approximate time constants of linear automatic regulation systems," No6, 675-689; "Evaluation of deviations in the simplest automatic regulation systems," No2, 137-143. I. M. Krassov, A. A. Tagayevskaya, and M. A. Vasil'yeva, "Determining the amplitude-phase characteristics of a regulator by the rectangular wave method," No1, 51-55. K. I. Kurakin, "Selecting the optimum characteristics of linear tracking systems," No4, 392-402. A. M. Letov, "Theory of the quality of nonlinear regulated systems," No5, 588-596. V. L. Lossiyevskiy, "Modeling of processes of regulation of manufactured goods," No3, 267-272. I. G. Mamedov, "Two theorems on the structural stability of linear regulation systems with discrete parameters," No1, 96-101. M. V. Meyerov, "Stabilization of systems containing elements with lag," No 5, 647-658. Yu. I. Neymark and I. M. Kublanov, "Investigation of the periodic regimes and their stability for simplest distributed system of relay temperature regulation," No1, 34-43; "Periodic regimes and stability of relay systems," No5, 556-569; "I. I. Gal'perin's works devoted to the conditions for structural stability of dynamic systems," No1, 88-92. (V. V. Solodovnikov) Discussion of V. V. Solodovnikov's book Vvedeniye v statistichskuyu dinamiku sistem avtomaticheskogo upravleniya [Introduction into the statistical dynamics of systems of automatic control] at the seminar on automatic regulation theory, Institute of Automatics and Telemechanics, on 27 May 1953," No4, 471-472. V. V. Solodovnikov, "Synthesis of correcting devices of tracking

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Avtom. i telem., 15, 367-374, Jul-Aug 1954

Card 3/3 Pub. 10 - 10/11

systems by means of optimum and typical logarithmic frequency characteristics," No5, 531-555. A. A. Tagayevskaya, "Determining the amplitude-phase characteristics of a linear system according to the curve of its transient process," No2, 231-237. A. I. Tupitsyn, "Form of the curve of transient process for minimum mean square error (Integral evaluation of the dynamics of automatic regulation systems)," No4, 407-417. N. A. Rufayev, "Theory of electromagnetic circuit-breakers," No5, 570-587. Ya. Z. Tsypkin, "Stability of periodic systems in relay automatic regulation systems," No5, 638-646. A. V. Khramoy, "R. G. Macmillan's book and its review," No2, 244-245. Ya. Z. Tsypkin, "Concerning T. A. Yakovlev's remark 'Limit of applicability of Ya. Z. Tsypkin's method in the theory of impulse regulation,'" No4, 466-470; "Calculating systems of discontinuous regulation in the presence of stationary random excitation." No4, 353-374. N. V. Yakovlev, "Limit of applicability of Ya. Z. Tsypkin's method in the theory of impulse regulation, No4, 460-465.

USSR/Physics - Automatics and telemechanics, seminar

Card 1/2 Pub. 10 - 11/11

Author : P. I. Chinayev

Title : Chronicles. Scientific seminar on automatic regulation theory in Kiev

Periodical : Avtom. i telem., 15, 375-380, Jul-Aug 1954

Abstract : In accordance with the second resolution of the All-Union Conference on Automatic Regulation Theory, held at the end of November 1953 in Moscow, a scientific seminar on automatic regulation theory has been organized in Kiev, just as in the other largest centers (Moscow, Leningrad, Gor'kiy, Sverdlovsk, etc.), under the guidance of A. Yu. Ishlinskiy, active member of Acad. Sci. Ukrainian SSR, first meeting being 15 February 1954 to plan reports for 1954; reports heard were: Dr. Phys.-Math. Sci. I. M. Rapoport, "General statement of the problem of Lyapunov stability." Cand. Tech. Sci. D. K. Shirokiy, "Criteria governing the stability of automatic regulation systems and their comparative evaluation." Cand. Tech. Sci. P. I. Chinayev, "Terminology and designations in automatic regulation theory." Cand. Tech. Sci. A. G. Ivakhnenko, "Inverse methods for investigating automatic regulation systems (developed by the lecturer)." Cand. Tech. Sci. O. M. Kryzhanovskiy, "Integral evaluation of quality, and selection of the parameters of automatic regulation systems in accordance with them." Cand. Tech. Sci. A. D. Ryabinin, "Selecting the optimum parameters of the correcting elements by the method of transient functions." Dr. Phys.-Math. Sci. A. M. Letov, "Problems of stability in automatic regulation theory." Dr. Tech. Sci. Prof.

Avtom. i telem., 15, 375-380, Jul-Aug 1954

Card 2/2 Pub. 10 - 11/11

Ya. Z. Tsypkin, "Theory of relay regulation systems (simplicity of design and maximum speed of action of relay-contact regulation systems; their quality)." Dr. Tech. Sci. Prof. V. V. Solodovnikov, "Problem of dynamic accuracy and quality of automatic regulation systems." Corr.-Mem. Acad. Sci USSR B. N. Petrov, "Present-day methods for experimentally investigating automatic regulation systems." Cand. Tech. Sci. V.V. Petrov, "Dynamics of one-cascade and two-cascade (series) servomechanisms with several nonlinear characteristics." At the 2-3 June 1954 meeting of the seminar, devoted to the 300 years of Ukrainian association with Russia, it was reported that the automatization of industrial production is being successfully studied by the Institute of Mathematics, Institute of Electrical Engineering, Institute of Mining, Institute of Electric Welding imeni Acad. Ye. O. Paton, Kiev Polytechnic Institute. In his above-mentioned lecture B. N. Petrov discussed the modeling apparatuses developed in the Institute of Automatics and Telemechanics of Acad. Sci. USSR by Corr.-Mem. Acad. Sci. USSR V. A. Trapeznikov and by Cand. Tech. Sci. B. Ya. Kogan and others. Participating in the discussions after the lectures were: Cand. Tech. Sci. Yu. G. Kornilov, N. M. Chumakov, V. I. Ushankin. L. A. Shoykhet, G. M. Ulanov, A. V. Khramoy, L. V. Tsukernik, etc.

USSR/Physics - Automatics and telemechanics, automatization of industry

Card 1/1 Pub. 10 - 1/13

Author : anonymous

Title : Automatizing the processes of production of goods extensively consumed

Periodical : Avtom. i telem., 15, 381-383, Sep-Oct 1954

Abstract : It is claimed that there is practically no effectively acting system to coordinate the operations of scientific research organizations in the field of industrial automatization; as a result of this lack there is now much duplication of efforts and cadres of qualified specialists are not being established. Many ministries are forced to develop and produce their own automatic apparatus in the face of the failure of the Ministry of Machine and Instrument Construction to produce such apparatus. It is recommended that a special technical journal devoted to publishing progress in the field of instrument and regulator construction be created. Also recommended is the publication of detailed catalogs, evaluations of apparatus, informational bulletins, expertly composed, to exchange experience and results of research in the field of automatization of industrial processes.

USSR/Physics - Automatics and telemechanics, automatization of industry

Card 1/1 Pub. 10 - 2/13

Author : Trapeznikov, V. A. (Moscow)

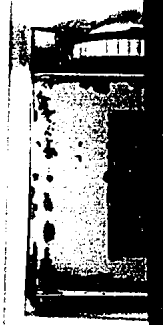
Title : Principal problems in the complex automatization of productional processes

Periodical : Avtom. i telem., 15, 384-391, Sep-Oct 1954

Abstract : A report using data of the scientists working on problems of automatization and telemechanization in the national economy; namely, D. I. Ageykin, M. A. Gavrilov, V. A. Il'in, A. Ya. Lerner, V. L. Lossiyevskiy, V. A. Trapeznikov, N. N. Shumilovskiy and representatives of five ministries. Formulated here are the principal scientific-technical and organizational problems which must be solved in the transition to the extensive introduction of complex automatization. Under discussion are problems of the partial and complex automatization of production, the main directions to be taken by scientific technical operations, the classification of objects worthy of automatization, and certain organizational problems in automatizing production.

Institution :

Submitted : May 15, 1954



USSR/Physics - Automatics and telemechanics, automatization of food industry

Card 1/1 Pub. 10 - 3/13

Author : Petrov, N. A. (Moscow)

Title : Ways to automatize the productive processes in the food industry

Periodical : Avtom. i telem., 15, 392-399, Sep-Oct 1954

Abstract : The author considers the problems of automatizing the production of stable foods. He surveys the present status of automatization of the stable foods industry and formulates tasks in the field of technical means for automatizing the foods industry.

Institution :

Submitted : May 10, 1954

USSR/Physics - Automatics and telemechanics, automatization of the cotton industry

Card 1/1 Pub. 10 - 4/13

Author : Zolotarëvy, N. I. (Moscow)

Title : Problems of automatization of the technological processes in the cotton industry

Periodical : Avtom. i telem., 15, 400-405, Sep-Oct 1954

Abstract : The author surveys the principal problems involved in the automatization of the technological processes in the cotton industry. He evaluates the effectiveness of automatization and gives his conclusions as to the direction of the main works in the automatization of the cotton industry. Conclusions: automatization of spinning, weaving, and finishing is the main means for increasing the quality of fabrics and other products of the cotton industry; automatization would free a considerable number of secondary workers in the cotton industry, who presently number several tens of thousands.

Institution :

Submitted : May 14, 1954

USSR/Physics - Automatics and telemechanics, automatization of dairy industry

Card 1/1 Pub. 10 - 5/13

Author : Vaynberg, A. Ya. (Moscow)

Title : Complex automatization of continuous-flow lines in the dairy products industry

Periodical : Avtom. i telem., 15, 406-411, Sep-Oct 1954

Abstract : Considered are the prerequisites and conditions governing the complex automatization of the continuous-flow lines in the dairy products industry. A scheme for the complex automatic control and regulation of the technological process of continuous-flow production of butter.

Institution :

Submitted : May 13, 1954

USSR/Physics - Automatics and telemechanics, automatization of tomato industry

Card 1/1 Pub. 10 - 6/13

Author : Timokhovich, P. P. (Moscow)

Title : Present status and problems of automatization of the production of tomato products

Periodical : Avtom. i telem., 15, 412-416, Sep-Oct 1954

Abstract : The author clarifies the present status of automatization of control and regulation processes in the production of preserves. He expounds a typical productive process, and notes ways to further develop automatization of the preserves and canning industry. He cites his earlier work, "Developing methods for automatically controlling the sterilization of preserves in vertical autoclaves," Otchet VNIIKP, No 20, 1948.

Institution :

Submitted : May 5, 1954

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USSR/Physics - Automatics and telemechanics, automatization of alcohol production

Card 1/1 Pub. 10 - 7/13

Author : Gavalov, I. V. (Moscow)

Title : Automatization of the technological processes in the alcohol industry

Periodical : Avtom. i telem., 15, 417-430, Sep-Oct 1954

Abstract : The author considers the problems of automatizing the production of alcohol from grains and potato sources. He clarifies the present status of automatization in the alcohol industry.

Institution :

Submitted : May 6, 1954

USSR/Physics - Automatics and telemechanics, automatization of the sugar industry

Card 1/1 Pub. 10 - 8/13

Author : Mitrofanov, V. P. (Moscow)

Title : Automatization of the processes of sugar production

Periodical : Avtom. i telem., 15, 431-444, Sep-Oct 1954

Abstract : The author treats the production of sugar as an object of automatization and clarifies its present status, especially in connection with the plan to construct 25 new sugar factories in the period 1954-1956; the increase in sugar output over this period is equivalent to the construction of 58 sugar factories of average capacity. He cites his related article, "Automatization of raw-juice (syrup) tanks," Sakharnaya promyshlennost', No 3, 1954.

Institution :

Submitted : May 5, 1954

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USSR/Physics - Automatics and telemechanics, automatization of candy production

Card 1/2 Pub. 10 - 9/13

Authors : Lunin, O. G.; Bronshteyn, I. I.; and Slezinger, I. I. (Moscow)

Title : Problems of the automatization of candy products

Periodical : Avtom. i telem., 15, 445-448, Sep-Oct 1954

Abstract : The authors clarify the present status of the control and regulation of technological processes in the confectionery industry.

Institution :

Submitted : May 12, 1954

USSR/Physics - Automatics and telemechanics, automatic drives

Card 1/2 Pub. 10 - 10/13

Author : Kozlov, B. P. (Moscow)

Title : Present-day status and prospects for the development of automatized electric drive in the production of consumer goods

Periodical : Avtom. i telem., 15, 449-456, Sep-Oct 1954

Abstract : The author clarifies the present state and prospects for the development of automatic electrical drives in the production of industrial goods enjoying wide-spread consumption. He formulates the problems posed by automatized drives in connection with newly created workshops and automatic factories. It is concluded that completely new circuit schemes and mechanisms for the complex drives necessary for future automatic factories must be created, necessitating considerable investigational work in this direction, especially on the part of the Ministry of Electrical Industry and Ministry of Machine and Instrument Construction.

Institution :

Submitted : May 15, 1954

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USSR/Physics - Automatics and telemechanics, seminar

Card 1/2 Pub. 10 - 11/13

Author : Naumov, B. N.

Title : Chronicles. All-Moscow seminar on automatic regulation theory

Periodical : Avtom. i telem., 15, 457-458, Sep-Oct 1954

Abstract : In accordance with the Second All-Union Conference on Automatic Regulation Theory, a city-wide seminar held in the Institute of Automatics and Mechanics in Moscow, just as in Leningrad, Kiev, Gor'kiy, Sverdlovsk, and other large centers, began its work, with the main purpose of judging original and survey reports relating to the theory and practice of automatic regulation by scientific workers, engineers, graduates and instructors of higher learned institutions of Moscow. For the guidance of the seminar a bureau was created consisting of: Dr. Tech. Sci. M. A. Ayzerman, Dr. Phys.-Math. Sci. Prof. A. M. Letov, B. N. Naumov (scientific secretary), Corr.-Mem. Acad. Sci. USSR B. N. Petrov (chairman), Dr. Tech. Sci. Prof. V. V. Solodovnikov, Dr. Tech. Sci. Prof. Ya. Z. Tsypkin. Reports heard have been: Cand. Tech. Sci. Ye. I. Baranchuk (Leningrad), "Analysis and synthesis of connected tracking systems found under the action of stationary stochastic disturbances." Dr. Tech. Sci. Prof. Z. Sh. Blokh, "Certain properties of imaginary frequency characteristics of automatic regulation systems." Dr. Tech. Sci. Prof. A. A. Fel'dbaum, "Survey of works on methods of distribution of roots and on integral methods." Dr. Tech. Sci. Prof. Z. Sh. Blokh, "Solution of some problems in the synthesis of automatic regulation systems by the method of distribution of roots."

Avtom. i telem., 15, 457-458, Sep-Oct 1954

Card 2/2 Pub. 10 - 11/13

Dr. Tech. Sci. Prof. T. N. Sokolov (Leningrad), "Problem of the criteria governing the quality of tracking systems." Dr. Tech. Sci. Prof. V. S. Pugachev, "General statistical theory of synthesis of dynamic systems." The seminar was held on the following dates, in 1954: May 5, 12, 26; June 16, 23.

Institution : .

Submitted : September 24, 1954

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USSR/Physics - Automatics and telemechanics, seminar

Card 1/1 Pub. 10 - 12/13

Author : Smirnova, I. M.

Title : Organization of a city-wide seminar on the mathematical problems of automatic regulation theory

Periodical : Avtom. i telem., 15, 458-459, Sep-Oct 1954

Abstract : In accordance with the Second All-Union Conference on Automatic Regulation Theory and Methods, organized in Nov-Dec 1953 to unite mathematicians and automatic regulation specialists, the Institute of Automatics and Telemechanics together with the Institute of Mathematics imeni V. A. Steklov in May 1954 organized a city-wide seminar of engineers and mathematicians for the purpose of familiarizing mathematicians with automatic regulation problems, under the guidance of Corr.-Mem. Acad. Sci. USSR L. S. Pontryagin, to meet once or twice a month in the conference hall of the Institute of Automatics and Telemechanics. At two meetings of the seminar in May-June 1954 the following were heard: Dr. Tech. Sci. A. A. Fel'dbaum, "Mathematical problems connected with the theory of optimum processes." (This report appears in part in Avtom. i telem., No 6, 1953.) Persons desiring to participate in the seminar write to: Moscow, D-40, Leningradskoye shosse, 9, c/o scientific secretary I. M. Smirnova.

Institution :

Submitted : July 2, 1954

USSR/Physics - Automatics and telemechanics, seminar

Card 1/2 Pub. 10 - 13/13

Author : Fedosov, Ye. A.

Title : Scientific-technical seminar on the theory and technology of automatic control and regulation

Periodical : Avtom. i telem., 15, 459-460, Sep-Oct 1954

Abstract : To familiarize engineers and college (vtuz) teachers with automatic control and to exchange experiences among specialists, the All-Union Scientific-Technical Society of Machine Construction and Instrument Construction, the Moscow Order-of-Labor Red Banner Higher Technical School imeni Bauman, and the Moscow Order-of-Lenin Aviation Institute imeni Ordzhonikidze organized the scientific-technical seminar on the theory and technology of automatic control and regulation, under the guidance of Dr. Tech. Sci. Prof. V. V. Solodovnikov; the program of the seminar consists of reports devoted to general problems, new methods and results of structure analysis and of synthesis and design of automatic control systems, to the description of new automatic control systems, tracking systems, stabilization systems applicable in the various branches of the national economy, to procedures for their design, planning, constructional peculiarities, to instruments and elements of automatic control and regulation systems, to methods of experimental investigation and modeling of automatic control systems, to digital computers and their use in the control of industrial production processes, and finally

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Avtom. i telem., 15, 459-460, Sep-Oct 1954

Card 2/2 Pub. 10 - 13/13

to the critical discussion of published works on the theory and technology of automatic control and regulation. From March to June 1954 six sessions of the seminar have been held: Dr. Tech. Sci. Prof. V. V. Solodovnikov, "Summary of the Second All-Union Conference on Automatic Regulation Theory." Dr. Tech. Sci. Prof. V. N. Chelomey, "Theory of pneumatic servo-drives." Dr. Tech. Sci. Prof. G. V. Kamenkov, "Stability of motion in a finite interval of time." Cand. Tech. Sci. A. A. Lebedev, "Problem of the stability of motion in a finite interval of time." Cand. Tech. Sci. N. T. Kuzovkov, "Some new applications of the method of logarithmic frequency characteristics to the investigation of regulated systems." Cand. Tech. Sci. M. A. Rozenblat, "Magnetic amplifier as an element of a control system." Dr. Tech. Sci. Prof. (Laureate of Stalin Prize) V. S. Pugachev, "General problem of the synthesis of dynamic systems in the case of random excitations." In the work of the seminar 478 persons have participated as representatives of 53 institutions. Of these 478 persons, 60% were workers of scientific-research institutes and designing buresus of factories, and 40% were professors, instructors and postgraduates of Moscow State University, Moscow Aviation Institute, Moscow Order of the Labor Red Banner Higher Technical School imeni Bauman, Moscow Engineering-Physics Institute (MIFI), Moscow Machine-tool and Tool Institute imeni I. V. Stalin (Stankin), etc. It has been proposed that their reports be published in Sbornik trudov seminar [Symposium of Works of the Seminar]. Since September 1954 the seminar has been conducting its work at the Moscow Order of the Labor Red Banner Higher Technical School.

Submitted : June 16, 1954

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